

**Remarks**

Claims 1-8 and 10-19 are pending.

Claims 1-8 and 10-19 have been rejected under 35 USC 102(b) based upon an alleged public use or sale of the invention and an assumption that the invention must have been described in a printed publication, and under 35 USC 102(a) as being anticipated by the sale of the invention in England. Those rejections lack merit, are devoid of any factual support, are based on supposition, and are strenuously denied.

The allegation of public use appears to be based on a purchase order dated 21 April 1997 from the Bank of England Printing Works to Quantum Glass. That purchase order relates to the build and supply of a “Proof of Principle Detector”.

None of the present claims are directed to a “detector”. The purchase order provides no evidence that the Detector to which it relates was in any way related to the subject matter of the claims. There is no reason to believe that the Detector in question was either intended or suitable for detecting security features of the type provided by the invention as defined in the claims. Moreover, the “build and supply” of a Detector does not amount to use of a method as defined in claims 1-8 and 10-15 or 18, a document as defined in claim 16, or a dopant as defined in claim 17. The Examiner’s assertion that “the invention was sold to the Bank of England Printing Works” is entirely unsupported by the evidence provided by the purchase order.

The assumption that any “use” associated with the “detector” referred to in the purchase order, whether related to the present invention or not, was “public” also is unfounded. The purchase order refers to a “Proof of Principle Detector” (emphasis added). There is no reason to suppose that any activity relating to the purchase order amounted to any kind of public use of the technology in question. It is further noted that paragraph 13 of the judgement referred to in the first Office Action refers to “a mutual confidentiality agreement ... entered into between the bank and Quantum Glass”. Clearly, no information was made public. The nature of the technology and its particular application in banknote security features is also such that secrecy and confidentiality can be seen to be of particular importance. There is nothing in the judgement to indicate that any of the technology in question was ever in “public use”.

Even so, any use, public or otherwise, of technology related to the purchase order that may or may not have occurred occurred in the United Kingdom. There is nothing to suggest that any relevant use occurred in the United States.

The Examiner's assertion that "the invention was thus in public use, and must have been described in a printed publication for it to be sold" is complete speculation and is entirely unsupported. No basis for this assertion exists. There is no evidence of any printed publication relating to the subject of the Purchase Order, nor of any printed publication relating to the present invention as defined in the present claims, whereby "knowledge of the invention" would have been "within the scope of being obtained by artisans in the United States."

A reference is a "printed publication" only "upon a satisfactory showing that such document has been disseminated or otherwise made available to the extent that persons interested and ordinarily skilled in the subject matter or art, exercising reasonable diligence, can locate it." (*In re Wyer*, 655 F.2d 221, 210 USPQ 790) [MPEP 2128]. In the present case, the very existence of a document is, in itself, pure supposition on the part of the Examiner. In the absence of an actual document, there can be no satisfactory showing that the imagined document has been disseminated or otherwise made available to the extent that persons interested and ordinarily skilled in the subject matter or art could locate it.

The Applicant has no information regarding the sale or public use of the invention while he was an employee of Quantum Glass. However, the following should be noted.

A third party, presumed to be Quantum Glass, intervened in the Applicant's co-pending Patent Applications in the European Patent Office and Australian Patent Office by filing "third party observation." Possibly, similar submissions have been made to the USPTO. Despite those observations, the European Application was allowed and will be granted on 24 March 2004 as European Patent No 1126979B, and the Australian Application has been accepted under publication No 758434. The Australian case has also now been opposed by Quantum Glass, but no evidence has yet been filed in support of the opposition.

The "observations" filed in Europe and Australia included allegations of prior non-confidential disclosure of the Quantum Glass technology. The Applicant had no prior knowledge of any such disclosures and does not accept that any such disclosures took place or that, if they did, that they amounted to disclosure of the invention that is the subject matter of the present claims. The "observations" also referred to alleged presentation materials ("Presentation

To Task Force A”, purportedly dated 15 July 1997, and “Presentation To SEAGRAM PLC”, purportedly dated 3 November 1997). The Applicant had no prior knowledge of any such materials, and does not accept that such materials were disclosed in a non-confidential manner or that, if they were, that they amounted to printed publication of the invention that is the subject matter of the present claims.

The observations also referred to the Purchase Order cited in the present case and discussed above, and to the purchase by Quantum Glass of a spectrograph, light source, fibre optic cable and probe, power supply and associated software, which purchase is not believed to have any bearing on the present case.

The observations also referred to a number of prior published patent publications. Two correspond to references cited in the present International Search Report (US-A-4442170 corresponding to WO-A-81 03509 and GB-A-2035208 corresponding to DE-B-28 45 401). A third, EP-A-0202902, was cited in the present International Search Report. The other three references were clearly of no relevance to the present invention. For the sake of completeness, these are:

WO-98 40224, which concerns glassy thermoplastic polymeric materials in which mechanical stress patterns are created by means of laser irradiation. The stress patterns are invisible to the naked eye but are rendered visible under polarized light. It is clear that this is entirely different from the invention as defined in claim 1.

WO-94 16902, which refers to a variety of types of covert security features, for use in combination with overt security features. The covert security features discussed include UV and IR fluorescent dyes, electrical resistivity inks, and biologic markers. None of these is in any way similar to the present invention as defined in claim 1.

US-A-5372387, which concerns document security devices employing liquid crystal materials whose transparency varies with temperature. Again, it should be clear that this is entirely different from the invention as defined in claim 1.

Claims 1-3, 11, 16 and 17 stand rejected under 35 USC 102(e) as being anticipated by Voets (USPN 6,114,077). That rejection is respectfully traversed.

Voets is concerned with providing a white toner composition comprising one or more types of polyester resin melt-blended with TiO<sub>2</sub>. In this context, TiO<sub>2</sub> provides a white pigment, as is well known in the art (today, titanium dioxide is the world's primary pigment for providing

whiteness, brightness and opacity). To the extent that Voets is concerned with security printing, it is concerned with providing only overt security features, in this case printed images that are not immediately obvious under normal lighting conditions but which are clearly visible under the correct lighting conditions, such as UV lighting (when a fluorescent brightening agent is used) or backlighting (transmission) – a kind of watermark effect. See Voets column 4, line 66 to column 5, line 38; column 10, lines 61-64; column 12, lines 5-8. Voets is not concerned at all with providing covert security features. The difference between covert and overt security features is discussed in the present description at page 1, line 17 to page 2, line 4.

In the context of the teaching provided by Voets,  $\text{TiO}_2$  cannot be said to be used as a “dopant”. The Merriam-Webster on-line Dictionary (<http://www.m-w.com/dictionary.htm>) defines “dopant” as an impurity added usually in minute amounts to a pure substance to alter its properties.

In Voets,  $\text{TiO}_2$  is not used as a “dopant”. It is included in the toner composition in substantial quantities (see Voets, table 2) in order to provide white pigmentation. The amount of  $\text{TiO}_2$  is varied in order to vary the opacity of the composition.

In the present invention, the dopants are used to provide a unique spectrographic signature. This is simply not the case with Voets, where  $\text{TiO}_2$  is used as a pigment in a well known manner.

The “melt-blending” of  $\text{TiO}_2$  with polyester resin would not result in alteration of the visible wavelength absorption spectrum of the  $\text{TiO}_2$  as required by the present claims 1 and 17.

To summarize, independent claims 1 and 17 are distinguished from Voets as follows:

- (a) Voets provides no teaching regarding covert security features, being concerned only with overt security features.
- (b) Voets provides no teaching regarding the use of dopants *per se* or of dopants which can be identified by examination of their visible wavelength absorption spectra.
- (c) Voets provides no teaching regarding the fusing of dopants with other materials so as to alter the visible wavelength absorption spectrum of the dopant.

Claims 2, 3 and 11 depend from claim 1 and are distinguished from Voets at least for the same reasons.

Claim 16 refers to a document provided with a covert security feature by the method of claim 1, and is thus distinguished from Voets for the same reasons.

Claims 17-19 stand rejected under 35 USC 102(b) as being anticipated by Langley *et al.* (USPN 3,951,672). This is also respectfully traversed.

Langley *et al.* discloses a glass frit containing lead ruthenate or lead iridate and a method of producing same, for use in thick film resistive elements. The frit is formed by mixing silica and lead oxide together with ruthenium dioxide and/or iridium dioxide, and heating to form a glass containing lead ruthenate and/or lead iridate. The resulting glass is micronized for use in a resistor paste composition.

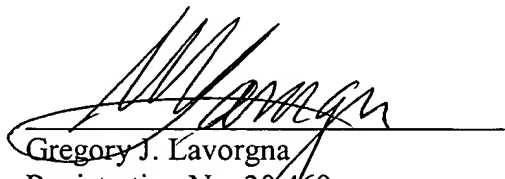
The Examiner has argued that the Applicant's intended use as a dopant for use in providing a document with a covert security feature does not distinguish the invention from Langley *et al.* However, ruthenium and/or iridium are essential components of the composition disclosed by Langley *et al.*, providing electrical conductivity. All ruthenium and iridium products are highly toxic. As such, the materials taught by Langley *et al.* are entirely unsuitable for use in providing covert security features in documents which, by their nature, will be handled by end-users and which may be disposed of by heating/burning. Accordingly, it is submitted that the intended use of the present dopants clearly distinguishes the present invention from the teaching provided by Langley *et al.*

It is respectfully submitted that all pending claims are in condition for allowance, and respectfully request that allowance be granted at the earliest date possible.

Should the Examiner have any questions or comments regarding Applicant's amendments or response, the Examiner is asked to contact Applicant's undersigned representative at (215) 988.2700.

If there are any fees due in connection with the filing of this response, please charge the fees to our Deposit Account No. 50-0573.

Respectfully submitted,



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